

Building Children's Brains

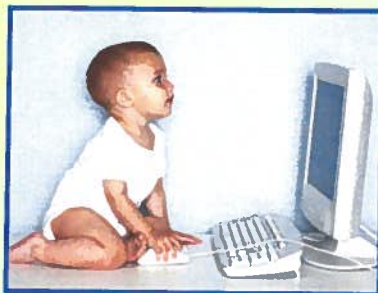
Joan Lessen-Firestone, Ph.D.
Director, Early Childhood Unit
Oakland Schools
2111 Pontiac Lake Road
Waterford, MI 48328



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Brain Development



"If the brain were so simple we could understand it, we would be so simple, we couldn't."

Lyall Watson

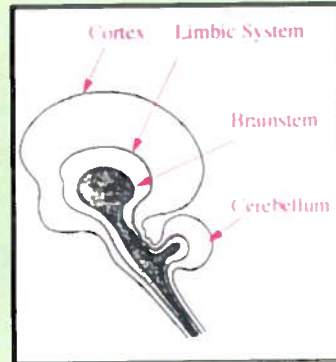
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Brain Development

- Brainstem: survival
- Cerebellum: automatic movements
- Limbic: emotion
- Cortex: reason/logic



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Brain Development

The experiences that fill babies' first days, months and years have a decisive impact on the architecture of their brains and the nature and extent of their adult capacities.



Lawton and Rhea Chiles Center for Healthy Mothers and Babies

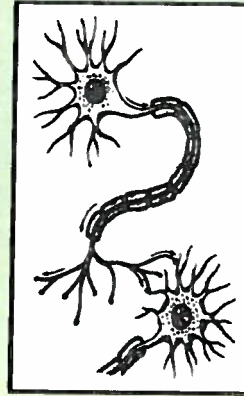
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Neurons: The Building Blocks

- Born with 100 billion
- Waiting to connect
- Cell body, axon, dendrites, and synapses



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Synaptic Activity



Enriched Neuron

Impoverished Neuron



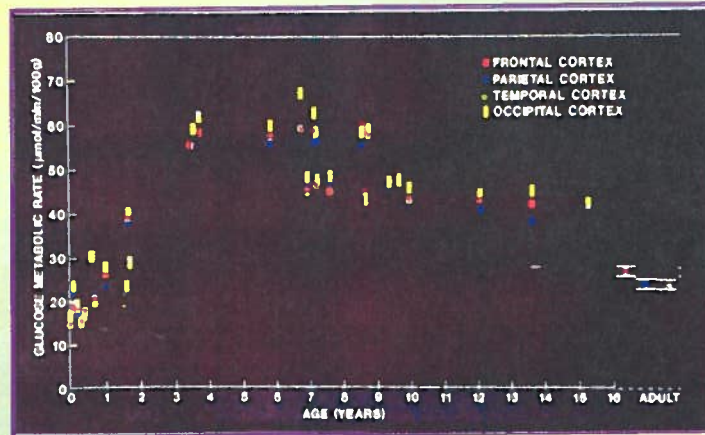
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Synaptic Activity



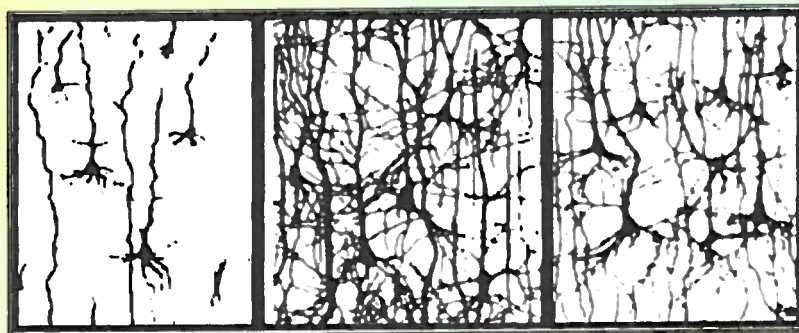
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Synaptic Density in the Human Brain



At Birth

6 years old

14 years old

Drawings supplied by H.T. Chugani

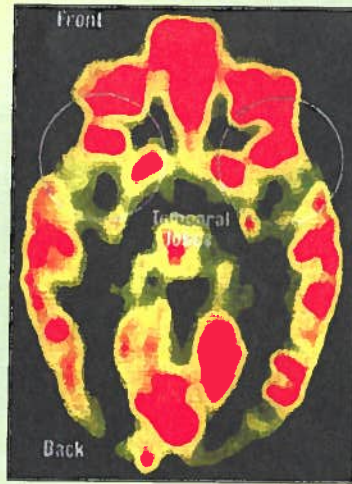
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Normal Brain Development



Source: Newsweek Special Edition, 1997

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At-Risk Brain Development



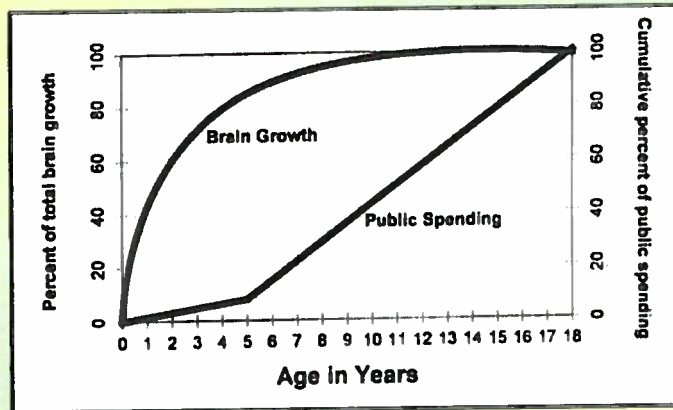
Source: Newsweek Special Edition, 1997

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Opportunity Lost



Provided by Paul Nelson, Director of Michigan FIA

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THANK YOU




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Early Childhood Team  **OaklandSchools**

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